INDEPENDENT OFFICES APPROPRIATION BILL FOR 1932

HEARING

BEFORE THE

SUBCOMMITTEE OF HOUSE COMMITTEE ON APPROPRIATIONS

CONSISTING OF

MESSRS. EDWARD H. WASON (CHAIRMAN), JOHN W. SUMMERS
JOHN C. ALLEN, RICHARD B. WIGGLESWORTH
CLIFTON A. WOODRUM AND JOHN J. BOYLAN

IN CHARGE OF

INDEPENDENT OFFICES APPROPRIATION BILL FOR 1932

WEDNESDAY, JANUARY 7, 1931.

SMITHSONIAN INSTITUTION

STATEMENTS OF HON. ROBERT LUCE, MEMBER OF THE BOARD OF REGENTS; DR. C. G. ABBOT, SECRETARY; DR. ALEXANDER WETMORE, ASSISTANT SECRETARY; DR. W. deC. RAVENEL, ADMINISTRATIVE ASSISTANT TO THE SECRETARY, NATIONAL MUSEUM; Dr. M. W. STIRLING, CHIEF BUREAU OF AMERICAN ETHNOLOGY; LEONARD C. GUNNELL, ASSISTANT IN CHARGE, REGIONAL BUREAU FOR THE UNITED STATES INTERNATIONAL CATALOGUE OF SCIENTIFIC LITERATURE, AND H. W. DORSEY, CHIEF CLERK AND ADMINISTRATIVE ASSISTANT TO THE SECRETARY

Mr. WASON. We will now take up the estimates for the Smithsonian Institution. Would you like to make a general statement, Doctor Abbot?

Doctor ABBOT. Mr. Chairman, Mr. Luce, a regent of the Institution, is here, and his engagements may not permit him to remain. I would like to have him make his statement first.

PREPARATIONS OF PLANS FOR ENLARGEMENT OF THE NATIONAL MUSEUM

Mr. LUCE. I would like to have Doctor Abbot preface what I want to say to the committee. He can give you the status of the project for enlarging the Museum, and then I would like to comment on the subject.

Doctor ABBOT. Mr. Chairman, the Congress last year passed an authorizing act for the extension of the United States National Museum Natural History Building to the east and west the authorized expenditure being $6,500,000. We had hoped that an appropriation might be made for the beginning of that work, but, owing to the stringency, the Budget Bureau, which had at first suggested the appropriation of a quarter of that sum, decided that this was not an opportune time to make it. However, at the meeting of the regents of the Institution some time ago the matter was under discussion, and the regents felt that it might be desirable to have a preliminary appropriation of $10,000 for the purpose of making preliminary plans, so that when the time came when a larger appropriation could be made available we could go on. This item of $10,000 was asked of the Budget Bureau some time ago, but it was not included in first deficiency bill. The regents have a feeling that something might be done at this time in this matter, and Mr. Luce has it in hand.

Mr. WIGGLESWORTH. What was the total authorization?

Doctor ABBOT. $6,500,000.

Mr. LUCE. Mr. Chairman, I wanted to call the attention of the committee to our experience in the matter of the length of time it takes to put through these building projects. In connection with my work on the Committee on the Library, I have been placed closely in touch with two of them, namely, the removal of the Botanic Garden and the new extension of the Library. With the utmost speed possible under our procedure here, every one of those new buildings must be a matter of years. This suggestion of a preliminary appro-

priation for plans would probably bring us 12 months nearer to the use of this addition to the Museum. I can lay before you one instance showing the occasion for this: The buildings of the Smithsonian Institution are now crowded. We have accepted a gift from Mr. Gellatly of New York, of a collection of objects of art valued at between three and four million dollars. It is now housed in an office building in New York City, because the only condition attached to the gift was that we should assume the lease of the space it occupied, and that lease will enable us to keep that collection there three years longer. At the end of three years, however, these objects must be put in storage, or else we must provide some place to put them. That collection alone is likely to require four or five thousand square feet of space. If we can make a start on this work now, it would be very advantageous to both the institution and the public at large.

That is the only point in connection with the appropriations for the Institution that I think would be warranted in taking up your time on.

Doctor ABBOT. I might say in connection with the matter that Mr. Luce has brought up, that Doctor Wetmore can testify that the National Museum is really crowded with specimens which have been collected and which are being collected from many sources and received from donors. It is essential to continue collecting because the sources become extinct as the progress of settlement and new devices and inventions go on. There is really not room to store that which we have. With the new objects that are continually coming in to the Museum, the urgency of the appropriation which Mr. Luce has asked for is very great. If 12 months could be saved by such a small appropriation, it would be highly desirable.

Mr. LUCE. May I say further, Mr. Chairman, that the regents have, I think, properly attended to their duties in supervising these requests for appropriations, and, so far as I am authorized to speak for them, I can say Amen to all that Doctor Abbot says in regard to them.

Doctor WETMORE. I might say, Mr. Chairman, that we have had this matter under discussion with Mr. James A. Wetmore, the Supervising Architect of the Treasury, who has been very kind in giving us advice. He tells me that after the preliminary plans are made, and we are ready to go ahead, our appropriations for this enlargement should be arranged on a scheme whereby the further appropriation for next year would be approximately $1,200,000, which would cover the drawings and specifications; that the appropriations for the second year should be about $4,000,000, and that the balance of $1,300,000 would be used in the third year. In other words, the building would cover three years of construction.

Mr. WASON. Do you know whether any request for the beginning of this work will be made by the Supervising Architect of the Treasury this year?

Doctor WETMORE. Mr. Wetmore says that his office will not be able to handle this proposition, and that we would need to look to outside sources for the architectural supervision necessary in the construction of the building.

Mr. WASON. Then, there would be an additional cost for the plans?

Doctor WETMORE. That would be done in the usual way. The expense would be the same in either case whether handled by outside sources or by the Office of the Supervising Architect. The Office of

the Supervising Architect is so occupied with the Federal building program going on throughout the country that he feels that he would not be able to take it up and give it supervision. In the original act of authorization, the wording was so made that the Smithsonian Institution would have permission to engage, if necessary, architectural and inspection service without regard to the restrictions of any existing law covering such services. In other words, the Smithsonian Institution's Board of Regents can get outside architectural assistance, just as has been done in the case of the addition to the House Office Building.

Mr. WASON. Have you made, or will you make, a request during the hearings covering that preliminary appropriations?

Doctor WETMORE. We would like to include the item of $10,000, as suggested by Mr. Luce, for the preparation of the preliminary plans.

Doctor ABBOT. I would like to suggest that even if this small appropriation could be made available for next year, it would be July, 1932, before the larger sum would be available for making the detailed plans and beginning the foundations. It would be in July, 1933, before the still larger sum would be available for going ahead with the building, and it would be July, 1934, before the final sum would be available for the completion of the building. Therefore, if we started now, by making this appropriation of $10,000 for 1932, the building possibly would not be ready to be occupied before 1936, which is a long time in advance. Some of us may be dead by that time. For that reason, if it is possible to hurry it along by this small appropriation, I hope it may be done.

Mr. WASON. Strictly speaking, this would come before another subcommittee, but perhaps we might get their consent to get it started.

Doctor ABBOT. I hope very much that may be done. Mr. Luce has suggested the views of the regents in the matter.

Mr. WASON. I thought there would be no harm in getting these statements in the record to show the situation down there, even if we determine it should not be put in this bill.

You may now proceed with your request for appropriations.

SALARIES AND EXPENSES

Doctor ABBOT. The first item is for the expenses of the general administrative office of the Smithsonian Institution.

Mr. WASON. Your first item appears on page 150 of the bill, as follows:

> For expenses of the general administrative office, Smithsonian Institution, including an additional secretary at $9,000 per annum during the present incumbency, compensation of necessary employees, traveling expenses, purchase of books and periodicals, supplies and equipment, and any other necessary expenses, $38,764.

Your current appropriation for this purpose is $38,264 and for 1932 you are estimating $38,764.

Doctor ABBOT. The following statement is submitted for the record in support of that item:

Appropriation, 1931		$38,264
Additional appropriation required for Brookhart Act		380
Total available for 1931		38,644
Budget estimate for 1932	$38,764	
Less amounts for under average salary adjustments	120	
Net amount for 1932		38,644

The above appropriation is to provide for the salaries of certain employees who, previous to the fiscal year 1929, were paid from the private funds of the Smithsonian Institution. As the services of these employees are in large part concerned with the administration of the several Government bureaus administered by the Institution, their salaries have been appropriated for by Congress, beginning with the fiscal year ending June 30, 1929.

There has been no change in the duties which they perform, and no increase is asked over the appropriation for the current year, other than $380 necessary to provide for the changes in salaries through the operation of the Brookhart act, and $120 to provide for increases in under average grades.

There is no change in this item other than that brought about by the Brookhart law. There is an increase of $380 through the operation of the Brookhart Act, and $120 is to provide increases for the underaverage grades.

Mr. WASON. $380 of the increase arises under the Brookhart Act.

Doctor ABBOT. Yes, sir; under the Brookhart Act, and $120 is to provide for increases for the underaverage grades.

Mr. WASON. What is the next item?

Doctor ABBOT. If you please, the assistant secretary will make a general statement regarding these small items for the underaverage salary adjustments.

Mr. WOODRUM. Before you leave this item, what about this provision for an additional assistant secretary?

Doctor WETMORE. That is my own position.

Mr. WOODRUM. We have been carrying that in this bill for some time.

Doctor WETMORE. Yes, sir; that was established six years ago.

UNDER AVERAGE GRADE ADJUSTMENTS

In presenting the estimates to the Bureau of the Budget this year, we were asked to include a statement as to the amount necessary to bring the grades which were under the average nearer up to the average. This was done, and the total amount, including the entire Smithsonian Institution, exclusive of the National Zoological Park, which comes under the District of Columbia appropriation bill, was $16,073. The Bureau of the Budget adopted the policy this year of allotting approximately 20 per cent of such requests, with the idea that the allotments would be continuing through other years until the various grades were brought up to the average. Under this policy, the total amount included by the Budget for the entire institution was $3,120, which is distributed through these various items that you have under consideration here to-day.

Mr. WOODRUM. $120 is included for that purpose in connection with this item.

Doctor WETMORE. Yes, sir; and amounts are included in similar items in other appropriations that carry salaries. I make that explanation so you will understand now what this small item is for. The total amount included in the entire appropriation, I will repeat, is only $3,120 to cover the step-ups.

INTERNATIONAL EXCHANGES OF PUBLICATIONS

Mr. WASON. The next item is for international exchanges:

For the system of international exchanges between the United States and foreign countries, under the direction of the Smithsonian Institution, including necessary employees, and purchase of necessary books and periodicals, and traveling expenses, $54,180.

Your current appropriation for this purpose is $52,650.

Doctor ABBOT. The following justification for this item is submitted for the record:

Appropriation, 1931		$52,650
Additional appropriation required for Brookhart Act		160
Total available for 1931		52,810
Budget estimate for 1932	$54,180	
Less amount for underaverage salary adjustments	120	
Net amount for 1932		54,060
Actual amount of increase over 1931		1,250

This appropriation is to provide for the interchange of scientific and parliamentary documents between the United States and foreign countries. based on the treaty of Brussels, of 1886, the returns from the exchange of the United States parliamentary documents being deposited in the Library of Congress.

The increase, other than $160 necessary to meet the requirements of the Brookhart Act, and $120 for increases in underaverage salaries, contained in the Budget estimate, is $1,250. Of this amount $1,000 is needed to meet the cost of additional freight on account of increase in the amount of material being forwarded, and $250 for boxes in which to transport the increased shipments. During the past three years, there has been an increase of approximately 20 per cent in the amount of freight handled, which necessitates the increase requested.

Mr. WASON. The increase in this item is $1,250.

Doctor ABBOT. The increases, other than $160 necessary to meet the requirements of the Brookhart Act, are $120 for increases in the underaverage salaries, and $1,000 of the increase is needed to meet the cost of additional freight on account of the increase in the amount of material being forwarded, and $250 is for boxes with which to transport the increased shipments. There is an increase of about 20 per cent in freight that has occurred within the last three years. That has occurred largely in connection with the transmission of government publications. That is, the amount sent over to us for transmission has increased. As I have said, in connection with this increase, there is an item of $250 for boxes in order to transport the increased shipments.

ETHNOLOGY RESEARCHES AMONG AMERICAN INDIANS AND NATIVES OF HAWAII

Mr. WASON. The next item is—

For continuing ethnological researches among the American Indians and the natives of Hawaii, the excavation and preservation of archeologic remains under the direction of the Smithsonian Institution, including necessary employees, the

preparation of manuscripts, drawings, and illustrations, the purchase of books and periodicals, and traveling expenses.

Your current appropriation for this purpose is $70,280, and for 1932 you are estimating $72,640.

Doctor ABBOT. The following statement is submitted in justification of the item:

Appropriation 1931	$70, 280
Additional appropriation required for Brookhart Act	560
Total available for 1931	70, 840
Budget estimate for 1932	72, 640
Actual amount of increase over 1931	1, 800

The above appropriation is to provide for the regular expenses of the Bureau of American Ethnology in making investigations of the languages, customs, and history of the American Indians, including the exploration and preservation of archæological remains.

The increase, in addition to the amount of $560 required to meet the provisions of the Brookhart Act, contained in the Budget estimate, amounts to $1,800. This amount is needed to provide for necessary field work by members of the staff and for the purchase of necessary equipment and supplies needed in the regular operations of the bureau.

In this item for the Bureau of American Ethnology, there is the amount of $560 required to meet the provisions of the Brookhart Act. The actual amount of the increase over 1931 is $1,800. This is in connection with field work by the members of the staff and for the purchase of equipment and supplies needed for the regular operations of the bureau.

Doctor Stirling, the director of the bureau, is here, and I will ask him to speak on this item.

Doctor STIRLING. This year the Bureau of Ethnology is taking two new members on its scientific staff. These are positions that have been in the bureau in the past, but which have been vacated during the past year or two. One was the position formerly held by Doctor Fewkes, and the other position was made vacant by the resignation of Doctor La Flesche, who retired after passing the age limit. Both Doctor La Flesche and Doctor Fewkes, as you know, were elderly men, and their field work had not been as constant as it had been in earlier days. They had, of course, during the time that each was with the bureau, covering a period of a great many years, accumulated a great amount of material, and they spent their last years with the bureau largely in working up this material rather than indulging in more extensive field work and accumulating new material.

We are taking on now two younger men, both of whom will report this year, one man at the end of this fiscal year, and the other is due to report the latter part of this month. During this past year, we have had available for research work the salaries that went with those positions, and, of course, that money has been very welcome for that purpose. With our depleted staff, we have been very easily able to account for that money—that is, we have been able to proceed in a satisfactory way within limits. Now, however, we are going to have an amount of money less than the combined salaries of those two men, and two more men to spend it for, with the result that next year our money for research is going to be spread out pretty thin as compared with what it has been in the past. We are not asking for any substantial increase for next year, and this small increase has

already been allotted for the purchase of materials in order to keep on with the work of the bureau.

ARCHEOLOGICAL RESEARCH WORK IN ARIZONA

Mr. WASON. What particular branch of research work have you been able to do during the present year?

Doctor STIRLING. This year we are doing some archeological work in the Southwest, under the direction of Doctor Roberts, who has conducted some exceedingly valuable excavations in Arizona. During this past year we have been excavating a site, dating about the year 700 A. D., which was located about 25 miles southwest of the pueblo of Zuni. As a result of his work, Doctor Roberts has been able to give us the first complete picture that we have of the southwestern civilization to-day. As some of you know, within the last two or three years, by a method of correlating the growth of three rings, such as were found in the timbers that went into the construction of these old pueblo dwellings, with the rings of living trees in that region, and with those found in timbers of which the early missions were constructed by the Spaniards, we have been able to carry an unbroken sequence of dates back to about the year 680 A. D. From our archeological work in the Southwest, we are now able to assign dates to the occupancy of these old ruins just as accurately as they can be assigned by reference to the corner stones that the Romans used. We know the date that the tree was cut. We know that date can be told by the outer rings, and we presume, of course, that these beams were cut at the time they went into the construction of the buildings.

That, of course, is determined by checking the number of rings, and, by finding which was the earliest beam and which was the latest beam cut, we can get the date of the earliest period of construction on the site and the latest period. In that way, we can get a very close approximation to the time the structures were occupied. This, of course, can be further checked by a study of the development of pottery and other types of decorations found, and, also, of other cultural remains characteristic of the different periods. So that now the southwestern archeologists can testify, when shown different specimens of pottery, or they can estimate within a very few years when that particular pottery was made. All of that has been worked out within the last few years, and it has been perfected, you might say, within the last year and a half. Doctor Roberts, I think, has had as big a part in this archeological development as any archeologist working in the Southwest. Of course, his work is made possible by the bureau's appropriations.

Mr. WASON. Do you publish any documents covering this archeological work?

Doctor STIRLING. Yes, sir; there are two bulletins that have been published by the bureau, Bulletins 92 and 96. Both are good-sized bulletins by Doctor Roberts. Our one hundredth bulletin will very shortly be off the press. I know that Doctor Roberts has just completed the page proof for it. All of this work has been published.

Mr. WASON. I wish you would send up some copies of those bulletins. I know I would like to have one.

Doctor WETMORE. Possibly this matter of the correlation of tree rings might be a little clearer of it is understood that the growth rings are broad during the years of abundant rainfall and narrow during dry seasons.

Mr. WASON. I think that some members of this committee have some knowledge of that.

Doctor STIRLING. Doctor Douglas, of the University of Arizona, who was chiefly responsible for working out this number-of-rings theory, discovered a rather interesting fact. In correlating the sequence of tree rings he found that the dryest year in the Southwest was the year 1918, the year the Volstead amendment was adopted.

Mr. WASON. Was one dependent on the other?

Doctor STIRLING. I do not know.

FIELD EXPENSES—ESTIMATE 1932 AND EXPENDITURES 1931

I think if Mr. Dorsey will read to you a statement of the expenditures for 1930, or this past year, as compared with the estimated expenditures for the next fiscal year, it will give you a rather definite idea of what we are up against.

Mr. DORSEY. In the matter of field expenses during the year 1930, just closed, the bureau had an actual expenditure in the field of $6,355. Now, with the appropriation for 1931 we were only able to estimate $5,320, or $1,000 less. In the item for equipment, we have an actual expenditure for 1930 of nearly $8,500, and with the current appropriation we have only been able to estimate an expenditure of $3,278, or over $5,000 less. That is by reason of the fact that the money that was available in 1930 for these two then vacant positions went into this field work and equipment. That is where the pinch is going to come, in field work and equipment.

Mr. WASON. Did you ask for this $5,000 in your estimate?

Mr. DORSEY. We are only asking for $1,800.

Mr. WASON. The rest of which you will absorb?

Mr. DORSEY. We will have to absorb it; yes, sir. $1,800 is all the increase that is asked.

Mr. WATSON. And that was allowed?

Mr. DORSEY. Above the Brookhart Act. That was allowed by the Bureau of the Budget. That is carried in the estimate before you: $560 increase due to the Brookhart Act and $1,800 for increased field work and equipment. That is in the estimate before the Committee allowed by the Bureau of the Budget.

Mr. WASON. And with that, you can pursue your work satisfactorily?

Mr. STERLING. Well, we can get along. I hope that we will be able to get along satisfactorily. This is not the proper time, I suppose, to take up the matter of an increase in the bureau appropriations, but we are going to have two more men on out staff who will be conducting active field work, and we are going to have their combined salaries less to spend for field work than we have had this past year. It means that with our present appropriation and with these two active men, we are not really going to have enough to conduct the work as we would like to.

COOPERATION OF STATES IN ARCHÆOLOGICAL AND ETHNOLOGICAL WORK

Doctor ABBOT. Mr. Chairman, in connection with this item, American Ethnology, I would like to remind you that several years ago, due to the influence of the gentleman from Tennessee, Mr. Byrns, an appropriation of $20,000 was made to be distributed by the Smithsonian Institution in cooperation with State enterprises. We have made a good many grants under that item to different projects in different States. They furnish on their part in addition as much as the General Government does out of this appropriation of $20,000.

That appropriation of $20,000 is now exhausted, but it has done a great deal of work in very many parts of the country, and it is very interesting that it should have been made at the suggestion of the gentleman from Tennessee, Mr. Byrns.

Mr. WASON. That was made in what year?

Mr. DORSEY. Two years ago.

Doctor ABBOT. I think it was very much appreciated by the different States.

Mr. WASON. Do I understand that you have got the work completed?

Doctor ABBOT. That was an item that was obtained at Mr. Byrns's suggestion in order to encourage archæological and ethnological work by the different enterprises in the different States, and there is no thought of an end to it. It could go on forever, if the money were available. But we have now exhausted that appropriation. I thought it would be interesting to the committee to know that through numerous grants to the enterprises in different States, we have now exhausted that special appropriation of $20,000, which was made two years ago continuing, and that a good many pieces of interesting work have been done.

Mr. WASON. Will you put in the record how you have disposed of the money, naming the States?

Doctor ABBOT. Yes, sir; we can readily do that, sir.

Mr. WASON. How much did you expend last year for this work?

Mr. DORSEY. About $9,000, between nine and ten thousand dollars. The statement of the grants made under this special appropriation of $20,000 to the Smithsonian Institution for cooperative archæological and ethnological researches with establishments in the different States follows:

UNIVERSITY OF CALIFORNIA

On November 20, 1928, $200 was granted to E. W. Gifford for the purpose of studying the ethnology of the Yuma and Kamia Indians of southern California. A report of this work, which consisted in rescuing a fast-disappearing culture, has already been prepared for publication by Mr. Gifford and will shortly be issued as a bulletin of the Bureau of American Ethnology.

On November 20, 1928, $200 was also furnished Doctor Gayton for the purpose of studying the ethnology of the Yokut and Western Mono Indians of the San Joaquin and the Sierra Nevada Mountains. Valuable results were obtained from this study, particularly in regard to the medical practices and use of magic by the shamans. The report of this work, which is nearing completion, will be published by the University of California.

On April 12, 1929, $250 was furnished Lila O'Neale for the study of the basketry art of the Indians of northwestern California. The California Indians are the makers of the world's finest baskets, and for this reason the art, which here reached its greatest development, is especially important.

On April 12, 1929, $250 was also furnished Theodore McCown for an ethnological study of the Kawaiisu Indians of south central California. Although these Indians lived mostly on the Californian side of the Sierras the study indicated that their language and customs belong rather to the Paiutes and Chemehuevi. An interesting result of the work was the manner in which it was demonstrated that a change of geographic environment also brings about changes in the culture of a people.

On April 12, 1929, $300 was granted Ralph Beale for the purpose of making an investigation of the Nisenan Indians of north central California. This work successfully filled an important gap which had heretofore remained in the knowledge between the Northern Maidu life long ago investigated by R. B. Dixon and the Miwok subsequently studied by E. W. Gifford.

On March 22, 1930, the following grants were made:

Two hundred and fifty dollars to Isabel Kelly for work among the Paviotso and the neighboring Modoc in northeastern California. This investigation, which is now nearing completion, helps to connect the cultures of northeastern California and western Neveda, and throws light upon the history of the important Shoshonean stock.

One hundred and fifty dollars was granted to Doctor Gayton for further work upon the shamanism of the Yokuts.

One hundred and fifty dollars was furnished E. M. Loeb for a study of the remaining groups of Yuki Indians in northern California. As the social structure of this once important group has now almost completely broken down, Doctor Loeb's work was barely in time to rescue for ethnology a picture of its former construction.

One hundred and fifty dollars was granted Lila O'Neale for the purpose of completing her work on northwestern Californian basketry.

One hundred and twenty-five dollars to E. W. Gifford for work among the Tolowa, a little-known group of Athabaskans in the extreme northwest corner of California. Because of the importance of this isolated linguistic group belonging to one of the great stocks of North America, a more complete knowledge of them is very important while such information may still be gathered.

One hundred dollars to C. A. Du Bois for the purpose of continuing his studies among the northern Wintun Indians.

UNIVERSITY OF CHICAGO

On November 26, 1928, an allotment of $1,000 was made to the University of Chicago. This fund was used in excavating a group of mounds near Quincy, Ill., the work being in charge of Mr. W. M. Krogman. The mound proved very productive and the results of the excavations were to give a picture of the prehistoric civilization in a heretofore unknown section.

On January 17, 1930, an additional allotment of $1,000 was made to the University of Chicago for the purpose of conducting an archaeological survey of the State of Illinois, this work being conducted under the direction of Dr. Fay-Cooper Cole, of the University of Chicago.

COLORADO STATE HISTORICAL SOCIETY

On June 12, 1929, an allotment of $1,200 was made to the State Historical Society of Colorado for the purpose of conducting an archæological reconnaissance and excavation work in Montezuma County, Colo., and the adjacent region. This work was carried out under the direction of Dr. Paul Martin, archæologist for the society. Two ruins called, respectively, Bear Tooth Pueblo and Little Dog Ruin were excavated and proved to belong to the early period of southwestern prehistory. The results of this expedition were published in the Colorado Magazine, the Journal of the State Historical Society, in January of 1930.

On June 19, 1928, a grant of $500 was made to Mr. P. E. Cox, State archæologist of Tennessee, for the purpose of conducting an archeological survey in the Great Smoky Mountains of Tennessee. The particular results obtained as a result of the expenditure of this fund was the excavation and exploration of the old stone fort near Manchester.

UNIVERSITY OF DENVER

The University of Denver and the Colorado Museum of Natural History of Denver were jointly allotted $1,500. The work accomplished was divided into three phases. The first was the archæological exploration of the partly forested country between Denver and Colorado Springs, this region constituting the divide between a branch of the Platte River and the Arkansas. The second phase of the work was an exploration of the region north of the Platte River and east to Yuma County. Here were discovered fine flaked arrow points similar to those found at Folsom, N. Mex. These were associated with fossil bones in Pleistocene graves, and it is possible that they indicate a considerable antiquity for man in this region. The third phase of the field work consisted in an exploration of the northern tributaries of the Arkansas River from the Kansas line westward toward La Junta and Pueblo. Several rock shelters were excavated and many photographs made of pictographs and other evidences of prehistoric occupation. The entire program of work was under the direction of E. B. Renaud, of the University of Denver.

UNIVERSITY OF ILLINOIS

On March 26, 1930, a grant of $1,000 was given to the University of Illinois for the purpose of conducting archæological investigations on Indian mounds in the vicinity of Utica, Ill. The village site on Plum Highland was excavated and is probably the location of the old Illini mentioned by Francis Parkman. Two of the mounds excavated at Utica appear to have been built upon an older underlying camp site, which suggests antiquity considerably greater than any heretofore reported in the upper Mississippi region. The work was under the direction of A. R. Kelly, of the University of Illinois.

INDIANA HISTORICAL SOCIETY

On June 16, 1928, an allotment of $900 was made to the Indiana Historical Society for the purpose of making an archæological survey of the White River Valley in southeastern Indiana. This work was successfully completed under the direction of Mr. Frank Setzler, and has been published as a bulletin of the Indiana Historical Society.

On June 28, 1929, an additional allotment of $1,000 was made to the Indiana Historical Society for the purpose of continuing their archæological survey. This money was expended in a survey of the White River Valley in the central and southwestern portions of the State. This work was also under the direction of Mr. Frank Setzler. His manuscript will shortly be published by the historical bureau.

On June 13, 1930, an additional allotment of $1,000 was made to the Indiana Historical Society for the continuation of the work in the White River Valley. This work was commenced by Mr. Setzler who later joined the staff of the United States National Museum and his place in the field was taken by Mr. Fred R. Eggan, of the University of Chicago. The work was completed at the close of the past summer.

UNIVERSITY OF KENTUCKY

On March 18, 1930, an allotment of $500 was made to the University of Kentucky for the purpose of exploring a series of so-called ash graves in eastern Kentucky, and also certain mounds in western Kentucky. Exploration of the graves determined that their former occupants were nonpottery making people of greater antiquity than the mound builders. The mound excavated contained stone graves and the relics found were typical of the mound-builder culture of Tennessee. This work was conducted under the direction of William S. Webb, of the University of Kentucky, and has been published as a bulletin of this university.

LABORATORY OF ANTHROPOLOGY, NEW MEXICO

On July 3, 1930, an allotment of $900 was made to the laboratory of anthropology, Santa Fe, N. Mex., for the purpose of conducting archaeological investigations of the basket-maker culture in the Guadalupe Mountain area of south-

eastern New Mexico. The field work was in charge of H. P. Mera, of the laboratory staff, and resulted in producing a very satisfactory picture of the life of the ancient basket-maker peoples of this region, a district in which they had heretofore been unstudied.

LOGAN MUSEUM, BELOIT COLLEGE, WISCONSIN

On June 12, 1929, an allotment of $500 was made to the Logan Museum of Beloit College for the purpose of conducting archæological work on the old Arikara villages on the upper Missouri River. This work was conducted by A. W. Bowers, of Beloit College. Two sites were excavated, their period of occupancy determined, and extensive collections of relics were made from each.

On March 18, 1930, an additional allotment of $1,000 was made to the Logan Museum of Beloit College for the purpose of excavating five Mandan villages in the neighborhood of Sanger. This work was also conducted under the direction of Mr. Bowers, who has prepared a report on the work which will shortly be published by the museum.

UNIVERSITY OF MICHIGAN

On April 12, 1929, an allotment of $500 was made to the University of Michigan for the purpose of conducting a survey of the archæology of the Muskegon and Marquette River Valleys in Michigan. This work was conducted under the supervision of Carl E. Guthe and resulted in the location and classification of several hundred new archæological sites.

UNIVERSITY OF NEBRASKA

On November 18, 1929 an allotment of $1,000 was made to the University of Nebraska for the purpose of conducting an archæological survey of the southern Missouri, Platte, and Republican River Valleys in Nebraska. This work was conducted under the direction of Duncan Strong of the University of Nebraska, and resulted in the identification of a number of early historical sites as well as determining the characteristics of the prehistoric culture of the district. A report of this investigation will shortly be published by the University of Nebraska.

OKLAHOMA HISTORICAL SOCIETY

On November 12, 1928, an allotment of $1,000 was made to the Oklahoma State Historical Society, of Oklahoma City, for the purpose of excavating several small graves in the vicinity of the Cimarron River, which contained vestiges of the early basket maker era, and also excavation of a mound in Beaver County, western Oklahoma, which appears to be related to the Pueblo culture of the Southwest. This work was undertaken by Mr. James B. Thoburn.

PHILLIPS ACADEMY

On May 28, 1930, an allotment of $1,000 was made to Phillips Academy, Andover, Mass., for the purpose of conducting an archæological survey of the Merrimack Valley in Massachusetts. This work resulted in the location and mapping of several hundred archæological sites and was under the direction of Warren K. Moorehead, of Phillips Academy.

SAN DIEGO MUSEUM

On June 12, 1929, an allotment of $800 was made to the San Diego Museum, of San Diego, Calif., for the purpose of conducting an archæological survey in western San Diego County, Calif. The result of this work, which consisted in the excavation of various kitchen middens and village sites, demonstrated that from very early times this section of the California coast supported a rather large population of a very primitive stage of culture. A report on the work has been completed by Malcolm Rogers, of the museum, who conducted the field work.

On March 22, 1930, an additional allotment of $800 was made to the San Diego Museum for the purpose of conducting an archæological survey in Los Angeles and Orange Counties, including work on the Channel Islands, particu-

larly that of Chanute. As a result a large collection of cultural material representing the civilization of the Chumash Indians was secured and a number of new archæological sites located.

UNIVERSITY OF UTAH

On July 8, 1930, an allotment of $800 was granted to the University of Utah for the purpose of conducting archæological surveys of the southeastern portion of the State, and of the excavation of one or two small sites in this area. This work was conducted under the direction of J. H. Steward, of the University of Utah, who succeeded in mapping several hundred sites, securing copies of hundreds of pictographs, and in one of the smaller sites excavated reported the discovery of the northernmost Pueblo kiva as yet disclosed.

UNIVERSITY OF WASHINGTON

On November 28, 1928, an allotment of $100 was made to the University of Washington in order that Mr. Bernard J. Stern of the university might conduct an ethnological study among the Lummi Indians near Bellingham, Wash. A report on this work has been prepared by Mr. Stern, to be published by the University of Washington. It is of particular interest inasmuch as nothing has heretofore been published on this Indian tribe.

YALE UNIVERSITY

On June 12, 1929, an allotment of $500 was made to Yale University, New Haven, Conn., for the purpose of conducting a study of the music of the Pueblo Indians, by Miss Helen Roberts. A reconnaissance tour was made of practically all of the Pueblos and a friendly contact was made with each, with particularly good results at San Ildefonso, Tesuque, and Cochiti. Ninety records containing over 100 songs were obtained.

INTERNATIONAL CATALOGUE OF SCIENTIFIC LITERATURE

Mr. WASON. The next item is International Catalogue of Scientific Literature.

International Catalogue of Scientific Literature: For the cooperation of the United States in the work of the International Catalogue of Scientific Literature, including the preparation of a classified index catalogue of American scientific publications for incorporation in the International Catalogue, clerk hire, purchase of books and periodicals, traveling expenses, and other necessary incidental expenses, $8,150.

Doctor ABBOT. The following statement is submitted for the record:

Appropriation for 1931	$8,145
Additional appropriation required for Brookhart Act	5
Total available for 1931	8,150
Budget estimate for 1932	8,150

In the above appropriation no increase is asked othern than $5 to meet the provisions of the Brookhart Act in the payment of the salary of one employee for one month.

The appropriation for the current year is $5,746, together with a reappropriated balance of $2,399 from the previous year, making the amount available for 1931 $8,145, the same as the Budget estimate for 1932, less the $5 Brookhart increase above mentioned.

Mr. WASON. The amount you are asking for 1932 is $8,150. I notice in the note at the bottom of the committee print that there will be an unexpended balance. Will you explain that?

Mr. DORSEY. The Bureau of the Budget, instead of making an appropriation of a part of the whole sum and reappropriating the

unexpended balance of the previous year as it had done heretofore, simply made a straight appropriation of the whole sum of $8,150. We had an unexpended balance last year of $2,400 which we asked to have reappropriated, but, just for the sake of bookkeeping, I suppose, they did not reappropriate the balance and an additional amount of $5,750, but included in the Budget as a straight appropriation the whole sum of $8,150. However, there is no increase in the amount at all over the appropriation for 1931.

Mr. WASON. There is no actual increase.

Doctor ABBOT. The chances are that not all of that money will be spent. As much will be saved next year as last, probably.

In connection with this item, I think we ought to say that during the past year we have made a number of moves endeavoring to continue in a first-rate way this important work of cataloguing American scientific literature in connection with the International Catalogue. It is no less important now than it ever was, and Doctor Richardson, who is over here at the Library of Congress, published a very searching and interesting and urgent article in Science, not long ago, in which he pointed out the great importance of this work. But, unfortunately for all of the representations which have been made, we have not succeeded in getting the international publication started again, and I think, sir, that if we do not succeed this year, we ought to cut off this item of the International Catalogue altogether, after the completion of the next fiscal year.

Mr. Gunnell is here, the Director of the Bureau, and I will ask if he will speak to it and see if that is his view.

Mr. GUNNELL. We have made many attempts to get the international organization together again, but it is so complicated, due to war conditions, that up to the present time it has been impossible to do it. The European nations have to cooperate in order to have the work go forward, and due to financial conditions in Italy especially, and Germany, and up to a very short time ago in France, they had not felt able to go on with it.

As Doctor Abbot says, if it can not be done within the time included in this appropriation, we think we will have to abandon it.

We need about $100,000 endowment fund to go forward with the actual publication, and that, of course, can not be asked of Congress.

But, with this appropriation, the efforts to reestablish the Bureau work can go forward another year and any unexpended balance would be returned.

Mr. WASON. You do not recommend that it be continued for the next fiscal year?

Doctor ABBOT. We do recommend its continuance for the next fiscal year, but if, at the end of that time, it shall not have been put on a continuing footing that is satisfactory, I think we shall recommend its discontinuance thereafter.

Mr. WOODRUM. Before you leave that item, Doctor Abbot, on this statement that you have handed us showing the various items, I notice that you do not have anything included for this particular item of the International Catalogue, but there is an item in breakdown that we have of increases in salary of $170. Is that for bringing up the salaries to the average of the grade? Is that all that $170 is for?

Mr. DORSEY. Yes, sir.

Mr. WOODRUM. Ought not that to be on this list?

Mr. DORSEY. Not for next year. We do not ask any for this appropriation next year at all.

Mr. WOODRUM. That was for 1931?

Mr. DORSEY. Yes, sir.

ASTROPHYSICAL OBSERVATORY

Mr. WASON. The next item is the Astrophysical Observatory.

Astrophysical Observatory: For maintenance of the Astrophysical Observatory, under the direction of the Smithsonian Institution, including assistants, purchase of books, periodicals, and apparatus, making necessary observations in high altitudes, repairs and alterations of buildings, preparation of manuscripts, drawings, and illustrations, traveling expenses, and mscellaneous expenses, $37,680.

Doctor ABBOT. The following statement is submitted for this item:

Appropriation 1931	$37,560
Additional appropriation required for Brookhart Act	60
Total available for 1931	37,620
Budget estimate for 1932	37,680
Less amount for under average salary adjustments	60
Net amount for 1932	37,620

The Astrophysical Observatory is engaged in the study of solar radiation, on which all life on the earth depends. Its investigations indicate that the amount of solar radiation received by the earth varies, and that there is a definite relation between this and the weather. No other investigation of this subject, in comparable manner, is being done by any other institution in the world, and it promises results not only of high scientific interest but of great economic importance in the forecasting of weather in advance.

No change is anticipated in the work of the observatory in the coming year, and there is no increase asked in the appropriation submitted by the Budget over the $60 to meet the provisions of the Brookhart Act and $60 to provide for the increase of an underaverage salary.

MEASUREMENT OF SOLAR CONSTANT OF RADIATION

Mr. WASON. Do you wish to make any further statement than is contained in your justification?

Doctor ABBOT. Mr. Chairman, the Astrophysical Observatory was founded nearly 40 years ago. The then secretary of the Smithsonian Institution, Doctor Langley, recommended it because he felt that the study of the sun, on which the life and the weather, and, in fact, all the enterprises of this planet depend, was so important, it ought not to be neglected.

Now, Mr. Chairman and gentlemen, I want to tell you what has happened. Mr. Langley used to defend this appropriation saying that, as the weather was caused by the sun, a knowledge of the sun's rays would eventually enable us to predict the weather. Well, there have been many times in the past 30 years when I felt that the grand results of the investigation might be negative. Nevertheless it had many interesting features, including the measurement of what is called the solar constant of radiation which is at the average

value of the intensity of the sun's rays. This important quantity for our earth, because all life depends on it, was not known within several hundred per cent when we began the work. A good many other very valuable results scientifically have been discovered. But I had a feeling that the changes in the sun's radiation which we found, although they were real, were so small that they could not have any importnat influence upon the weather.

But, this last summer, having collected now a series of 12 years of very accurate observations, daily observations, I began to study to see what dependence there really is of the weather on the variation of the sun.

I will show you a number of charts, not in very good form, but I think you will understand them.

The solar radiation, according to our daily observations of it, frequently goes through a sequence of several values going upwards, and, perhaps, a few days later, there will be several successive values going downwards; these changes being of the order from one-half up to 2½ per cent. So that the solar radiation as it is emitted by the sun himself is continually fluctuating over a range of from one-half to 2½ per cent, occurring in daily sequences of four or five days.

I have taken all those occasions in the month of March over an interval of seven years in which the solar radiation was increasing, such as might be indicated by such a march of events as that [indicating on chart]. This red line here [indicating] will show the average corresponding march of the temperature in Washington over a period of 25 days associated with such rising sequences of solar radiation.

If, however, the solar radiation is decreasing four or five days in some such way as that [indicating on chart] the different curve shown in blue will be the average march of the temperature in Washington. If we go to the month of April, we see a still wider difference between the red line and the blue line. If we go to September, we find our positions reversed; the red line, which was formerly above, is now below, and the blue line above. Nevertheless this opposition of events continues. In October the red and blue curves return to the relative position found in March and April, but their opposition still continues.

I have submitted this chart to 11 of my colleagues in physics, including Doctor Douglas, of Tree-Ring celebrity, who has been mentioned already; Doctor Adams, the director of the Mount Wilson Observatory; and a good many others, including Doctor Ladenberg, of Berlin, who was here, and they all of them unite with me is saying that this chart proves that the weather of Washington—and it is so at other stations which I have computed—is very surely dependent upon the variation of the sun which we observe at the top of Mount Montezuma in the Atacama Desert of Chile in South America.

Not only that, but this red line and the blue line are 10° apart at this point [indicating]; 10° apart at this point; 10° apart at this point [indicating]; here they are much more than 10° apart [indicating]. Here they are 10° apart; here they are 10° apart [indicating].

These are average values corresponding to a change of only eight-tenths of 1 per cent on the average in the radiation of the sun.

Hence, we may say that the weather of Washington is chiefly dependent on the variations of the sun.

This will lead to an entire revolution in the thought of meteorologists. Hitherto, I suppose there is no meterological service in the world, or hardly any meteorologist of importance in the world but has supposed that the variation from regular periodic climates which we call weather is due to local conditions. To illustrate my point, in a stream you have a flow of water—call that climate. There are stones and irregularities in the bed of the river, and they produce fluctuations in the stream. Call that weather. Meteorologists almost without exception think that similarly the weather is primarily due to the local conditions, terrestrial altogether. This that I have shown you is a new departure. It suggests that weather, on the contrary, is due to the intervention from time to time of changes in the sun. As you see, the effects are sometimes produced as much as 10 days after the event or even 17 days after the event.

How can that be? Well, you recall the illustration of the stream again. If I throw stones in with one hand at this point and throw stones in with the other hand up here [indicating], the effect up there will drift down to this point here [indicating] and produce an after effect with some lag. Similarly it is probable that this weather effect here [indicating] 10 days after the event, is due to a primary operation of the sun, way up in the Behring Sea locality, which takes 10 days to drift down to Washington. So that it is possible—and it is being done by a gentleman who was formerly connected with the Institution, Mr. Clayton—to actually forecast the weather a week in advance on the basis of this 10-day lag. He is actually doing that. He has over 100 paying clients, including a number of corporations who employ statistical organizations and compare his results with the actual events, and they find it worth while to buy his services.

This solar work, therefore, is very hopeful as a new idea in meteorology, and one that is likely to bring much new knowledge of the weather.

I am very much interested in another feature of it——

Mr. Wason. Before you leave that, how many years have you been studying this?

Doctor Abbot. We began the measurements of the solar constant of radiation in 1903. They were first made here in Washington, and we partly perfected the methods here.

Then we went to Mount Wilson in California in 1905, carried on there in summer times until 1920.

In 1918 we established by the aid of private funds an observatory in Chile, which has been carried on continuously up to this time, and which has proved to be the best place in the world, so far as we know, for that work.

We now have an observatory also in southern California on Table Mountain and another one in southwest Africa, all engaged upon this same measurement of the radiation of the sun.

Mr. Summers. How expensive are those observatories in South America and in South Africa?

Doctor ABBOT. The cost of establishing one of those observatories is about $10,000, and the cost of keeping it up is about $10,000 a year.

Mr. SUMMERS. Each?

Doctor ABBOT. Yes.

Now, Mr. Chairman, if the variations of the sun were purely accidental or haphazard, irregular, it would be impossible to forecast their occurrence, but we might make use of the lag of terrestrial events which I spoke of for weather-forecasting purposes.

If, however, we could find regular periodicities in the variation of the sun, so that we could forecast the variation of the sun itself, then we would be in a position to forecast for seasons and years in advance, as Doctor Langley in his original arguments before this committee used to hope.

I have been making a study of the variation of the sun as expressed by the monthly mean values since 1918. They are shown in this red curve at the top of the sheet [indicating], and I have found that they are entirely represented, or as nearly as that closely similar blue curve below the red one shows, by the sum of five regular periods:

This one of 68 months [indicating]; this one of 45 months; this one of 25 months; this one of 11 months; this one of 8 months [indicating].

The sum of those five curves makes this blue curve which you see almost exactly represents the original curve of observation.

It was such an accurate fit that I felt justified in going on a prediction of what the variation of the sun is going to be in the next two years. It is indicated by this red curve here [indicating], which is on a larger scale.

I have also found that there are certain shorter periods in the variation of the sun occurring in different years.

This figure here [indicating] represents a fluctuation of 45 days, with one-eighth of 45 days, or 5.6 days, represented also. Thus it is very hopeful that we shall reduce the variation of the sun to periodic terms which can be added together and produced into the future: so that I have a great hope now that we shall be in a position to forecast weather for seasons and even for years in advance, with very fair results.

In order to check that hope, I have gone further and studied the temperature of Washington for the last 12 years, as represented by this red curve at the bottom, which is from publications of the United States Weather Bureau [indicating]. I find it is as nearly represented as that blue curve [indicating] shows you by the sum of the same five regular periodicities which are shown there [indicating on chart]. This is the 68-month; this is the 45-month; this green here at the bottom is the 25-month; this is the 11-month; and this is the 8-month [indicating on chart].

In the periodic variation of the temperature of Washington you will see that even in detail this blue curve represents the red curve excepting occasional discrepancies. Apparently at the present time, in the last year or so, they have gone somewhat apart. We are yet in the infancy of this business, but I leave it to you, sir, that the prospects are very favorable indeed. We hope very much that by further studies of this kind we shall bring about a new era in meteorology.

Mr. WASON. How many years have you been making these observations?

Doctor ABBOT. I came to Washington, sir, in 1895, at the invitation of Secretary Langley and I have been associated with the Astrophysical Observatory ever since that time.

We began to make the studies on the intensity of the solar radiation at Washington in 1903. We established the observatory in Chile in 1918; established the observatory in Southwest Africa with the aid of the National Geographic Society in 1926. But it is now 35 years since I began to serve my apprenticeship in this kind of work.

As to the items of the appropriation for the Astrophysical Observatory, no change is made with the exception of an item of $60 to meet the provisions of the Brookhart Act and $60 to provide for an increase to bring up an underaverage salary.

However, I will say, Mr. Chairman, that the Smithsonian Institution from its private funds pays about $5,000 a year toward the support of this solar work. We have had, besides, from a friend of the institution, I think between $200,000 and $300,000 for the establishment of stations, for studies of the observations, and for other purposes. These sums from private sources have been added to the appropriations which the Government has made for this work, which is now turning out so satisfactorily.

RESULT OF SOLAR OBSERVATIONS

Mr. WASON. In plain English, so anybody reading the hearings can understand it, when you have finished your observations, which were undertaken years ago, what will be the practical application of the result?

Doctor ABBOT. I fully believe, now, sir, that within a short time the forecasting of the weather, instead of being done from day to day, as it is now by aid of telegraphic news as to conditions which prevail a few hundred miles west of us, will be done by the knowledge of the condition of the sun. It will be done not only a day or a few days in advance, as is customary at the present time, but weeks, possibly months, possibly years, in advance. Even to that hitherto unheard of extent, we shall get a fair knowledge of what is ahead of us.

Mr. WASON. You mean by that, by making a comparison or by making an observation of the relative position of the earth with reference to the position of the sun or vice versa?

Doctor ABBOT. No; it does not depend upon the variation of the position of the earth, but rather on a variation of the amount of heat which the sun is sending out to warm the earth.

These changes which I have pointed out are changes in the amount of heat which the sun sends through its light and other rays. Some of these rays are visible, others extending toward the ultra-violet, some extending toward the infra-red. They, altogether, make up a certain amount of energy which keeps the earth warm, sustains vegetation, and, in general, maintains all life upon the earth. It is the quantity of this energy which we are measuring from day to day.

We find this quantity not constant, but variable, and these variabilities, as I have shown you, sir, are found to be periodic. Thus, we may predict on the basis of the studies we have made. We expect to be able to predict the course of the variation of the sun, and, depending from that, the weather of the earth. For we find that the weather is variable, depending upon the variations of the sun. So that if we can predict, as we apparently can do, the course of the variation of the sun we shall be able to predict the consequences which will follow upon the weather. Thereby, we may hope, and I have a very great confidence that our hope will be fulfilled, that in a comparatively short time we shall be in a position to forecast weather conditions for a long time in advance.

Mr. WASON. And that principle will be applied for the benefit of other countries as well, I suppose?

Doctor ABBOT. Yes. We are making all the observations which are necessary, provided we can get every single day of the year. Our station in South America is on the top of a mountain 9,000 feet high, in the desert of Atacama, where it very rarely rains, and we are able to observe about 80 per cent of the days. At the station at Table Mountain, Calif., we also observe about 80 per cent of the days, and at the station in southwest Africa we also observe about 80 per cent of the days, but not always satisfactorily at any of the stations. Despite the fact that we have these three stations, we are not able to observe satisfactorily on every single day as we ought to do for this purpose. It may be that will be necessary to seek out still another place in the world, if possible, still more favorable, so as to observe every single day what the condition of the sun is.

If that could be done, the information would be available not only to the United States, but to every country in the world for forecasting purposes.

At the present time our observations are being printed every day by the United States Weather Bureau upon its map. They are also being broadcasted at 4 o'clock every afternoon through Science Service to all parts of the world.

Mr. SUMMERS. Your views on the subject have changed within the last year or two, as to your ability to forecast in advance for long periods of time?

Doctor ABBOT. Yes, sir; they have changed radically. I began to make these studies which I have shown you about May or June of this last summer, and only yesterday I finished the chart which showed periodicity in the weather of Washington, so that it has only been within the last six months that the discussions have been made. This is absolutely new stuff that I have been giving to the committee.

Mr. SUMMERS. My recollection was that you did not hold these views a year ago when you were before us. Does Doctor Marvin, the Chief of the Weather Bureau, go along with you in these results?

Doctor ABBOT. He does not know about them yet. That is to say, I showed him my preliminary work last May, and at that time he had an audience for me of all the principal men in the Weather Bureau. I showed him the preliminary steps in what I have just

exhibited but at that time he had not the full facts before him. Neither has he the full facts before him as yet. I am just now preparing for publication at the Smithsonian Institution a statement of these affairs of which the committee has had the very first hearing.

MAINTENANCE AND OPERATION OF NATIONAL MUSEUM

Mr. WASON. On page 160 is a new item for furniture, fixtures, and so forth, as follows:

For cases, furniture, fixtures, and appliances required for the exhibition and safe-keeping of collections; heating, lighting, electrical, telegraphic, and telephonic service, repairs and alterations of buildings, shops, and sheds, including approaches and all necessary material; personal services, and traveling and other necessary incidental expenses, $155,060.

Dr. ABBOT. The following justification for this item is submitted for the record:

Appropriated for 1931:	
Furniture and fixtures	$33,740
Heating and lighting	93,120
Building and repairs	53,440
Deficiency item under building repairs	3,500
Total	183,800
Underaverage salary adjustments	480
Total	154,580
Budget estimate for 1932	155,060
Decrease for 1932	29,220

At the direction of the Bureau of the Budget in preparing estimates for 1932 three appropriations carried as separate items in previous years, viz., those known as (1) Furniture and Fixtures, (2) Heating and Lighting, and (3) Building Repairs, were combined under the caption of Maintenance and Operation, these three being similar in function in that they are concerned with the physical maintenance of our organization. This step was taken to simplify the Budget statement and is highly commendable in that it will afford greater efficiency and simplicity in administration. The wording of the combined act for 1932 is identical with that of the separate acts of preceding years except for such slight changes as have been required for proper verbiage. The authority of the new act therefore is identical with that in existence for the previous year.

This appropriation provides for cases, furniture, fixtures and appliances, including pasteboard boxes, trays, glass jars, and vials, and other similar things needed in the care and preservation of the national collections, which are now estimated at over 12,000,000 specimens, for heating, lighting, electrical, telegraphic, and telephonic service, all repairs, and alterations to roofs, walls, ceilings, floors, and windows of the Museum buildings, comprising the Natural History Building, the Arts and Industries Building, the Aircraft Building, the south shed, and such portions of the Smithsonian Building as are used by the Museum.

Additions to personnel include the following:

Two additional senior mechanics, CU–7 at $1,860, amounting to $3,720, one to be a painter and the other a carpenter for work in our shops. Necessary painting, particularly of walls and ceilings, is far in arrears and needs prompt attention to avoid actual deterioration. The work of the carpenter shop has also gone steadily in arrears as the present force is not able to manufacture the necessary cases required for the preservation and exhibition of our growing collections and to do the other miscellaneous work required. These employees are urgently needed.

One additional undermechanic, CU–4 at $1,320 is needed in the mechanical shops as an assistant to the more experienced men in higher grades, to change lights, put in fuses and similar work of a minor nature that now higher paid men must leave more exacting work to do. The new assistant is required for efficient performance of this force.

An additional sum of $1,809 has been estimated for required purchases of paints, lumber, and metals required in our shops, the present allotment being insufficient, particularly if new mechanics are to be employed.

A further additional sum of $1,440 has been estimated for increase in purchases of glass jars, vials, boxes, and other containers for specimens, the present allotment being insufficient for our needs in this direction.

Under the appropriation for building repairs for 1931, there is included $32,000 in noncontinuing items and $3,500 in a deficiency item, and under heating and lighting a noncontinuing item of $2,000, giving a total of $37,500. The additions in the estimates for 1932 in the regular items of $5,040 for personnel, $1,800 for supplies, and $1,440 fore equipment, amount to $8,280, the difference of $29,220 being the decrease in the estimates for 1932 over the appropriation for 1931.

Doctor WETMORE. As has been indicated there is combined under this act three acts that have been carried regularly for the maintenance of the National Museum. These three acts have been those of furniture and fixtures, heating and lighting, and building repairs. They are all concerned with the physical upkeep of our property and are all similar in kind. Heretofore, they have been maintained as separate entities.

To indicate the difficulties that may arise under the present procedure, I may simply relate that if in one of the rooms in the National Museum, we wish to install a new shelf, and perhaps make some repairs to a radiator, under the existing appropriations, that work may fall under three separate acts involving three separate appropriations. The shelf would be made under the appropriation furniture and fixtures. If it were necessary to refinish the wall because of some damage to the paint or plastering, that would come under building repairs, whereas the repairs to the radiator would be under heating and lighting. By combining these three acts under one head, as we have done here, the whole procedure of maintenance is greatly simplified in our bookkeeping.

Mr. WOODRUM. I observe that under the three acts in the 1931 bill, you had $183,800, and under the three acts combined you are asking for 1932, $155,060, or a decrease of $28,740.

Doctor WETMORE. Yes. In the appropriation for building repairs for 1931, there is included $32,000 of noncontinuing items, one for fire protection in the aircraft shed of $7,000 and one of $25,000 to build a gallery to provide additional storage for mammal collections.

There is also under building repairs for this year, a deficiency item of $3,500, to make necessary rearrangements and additions in certain comfort room facilities in the old National Museum building.

Under heating and lighting, there is an item of $2,000 for the purchase of an electric pump as an additional fire protection in the Natural History Building. These amount to $37,500 and are all noncontinuing.

They are completed now or are under way so that they will be at the close of this fiscal year.

In the estimates I submit here before you for 1932 in the combined act there are increases of $5,040 in personnel, to provide for two

additional senior mechanics, a carpenter, and a painter much needed in our work, and one undermechanic to assist the higher paid man—a total of three positions.

There is a further increase of $1,800 for supplies and $1,440 for equipment. These increases amount to $8,280.

The decrease of $29,220 indicated for 1932 is the difference between this increase and the noncontinuing amount of $37,500.

I may say that the mechanics that we are requesting here are very urgently needed. We make our own cases and furniture, both exhibition and storage. We do our own repair work of all kinds. The shops are manned by highly efficient personnel, who are working to full capacity. They are behind in their work. We find it impossible to keep up with the existing demands upon them.

PRESERVATION OF COLLECTIONS, NATIONAL MUSEUM

Mr. WASON. Your next item is for preservation of collections, National Museum, as follows:

For continuing preservation, exhibition, and increase of collections from the surveying and exploring expeditions of the Government, and from other sources, including personal services, traveling expenses, purchasing and supplying uniforms to guards and elevator conductors, postage stamps and foreign postal cards, and all other necessary expenses, and not exceeding $5,500 for preparation of manuscripts, drawings, and illustrations for publications, and not exceeding $3,000 for purchase of books, pamphlets, and periodicals, $621,050.

Doctor ABBOT. The following statement is submitted:

Appropriated for 1931:	
Preservation of collections	$593,048
For Brookhart Act adjustments	3,596
Books	3,000
Postage	450
Total for 1931	600,094
Budget estimate for 1932	621,050
Under-average salary adjustments	2,160
	618,890
Increase for 1932	18,796

At the direction of the Bureau of the Budget in preparing estimates for 1932, three appropriations carried as separate items in previous years, viz., those known under the captions of (1) preservation of collections, (2) books, and (3) postage, were combined under the single head of preservation of collections. This step was taken to simplify the Budget statement and for greater simplicity of administration. It is considered highly commendable and desirable action from every standpoint. The wording of the combined act for 1932 is identical with that of the separate acts of preceding years except for such slight changes as have been required for proper verbiage. The authority of the new act therefor is identical with that in existence for the previous year.

This is the main appropriation for the maintenance of the National Museum and covers all expenses not specifically appropriated for otherwise. It includes the main salary roll for the scientific staff and guards, as well as the labor and char force. Under it, therefore, there is covered the work of identifying, classifying, and exhibiting the national collections, the preparation of books and memoirs presenting the results of study of the collections, expenses in connection with new additions to the collections, and the cost of maintaining the extensive public exhibits of the Museum. The extended act

will also cover expenditures for books for the Museum library, and for foreign postage in the transaction of Museum business.

The major part of the increase requested is allocated for the salary roll.

Of this amount $2,160 represents an increase necessary to cover reallocations in positions by the Personnel Classification Board.

Additions to personnel include the following:

One additional senior clerk-stenographer, CAF–3, at $1,620, for service in the division of birds. This division has three workers on the scientific staff who are entirely without clerical help of the type indicated for the handling of correspondence, papers and typing. The work of this unit is important and requires the additional assistance indicated as at present it is necessary to supply temporary help for part of each year, while for the rest the men concerned are required to do the work unaided. Their work is falling in arrears.

One additional clerk-stenographer, CAF–2, at $1,440 is required in the routine work of the office of the superintendent of buildings and labor. The work of this office has greatly increased due to the additional activities of our organization and can not keep abreast of this routine with the present force of only one permanent clerk.

Eight additional guards, CU–3, at $1,200 per annum, give an increase of $9,600. These men are demanded for service in the Museum buildings where the guard force is at present badly undermanned. Not only are there insufficient men for the work required, but at present it is possible to allow our regular men only two days' absence per month to compensate for Sunday and holiday service throughout the year.

Two additional junior laborers, CU–2, at $1,080, amount to $2,160. The labor force is undermanned so that at the present time it is not possible to keep abreast of the steadily increasing work involved in handling and rearranging exhibits and cases, and other necessary work requiring such services.

Under supplies and materials, an increase of $500 is estimated to cover additional miscellaneous material needed in the regular work of the organization This item covers the purchase of stationery, miscellaneous office supplies, cleaning and toilet supplies, and chemicals and similar things. The existing appropriation is not sufficient for present needs.

An additional $500 is required for freight, this being a growing item due to increase in the flow of valuable materials coming to the Museum.

Under equipment there is an additional allotment of $816. This item is concerned with miscellaneous equipment of various kinds, including that for offices, that used in our scientific and research work, tires and parts for auto trucks, the purchase of specimens needed to fill gaps in the collections, and similar things. The increase is urgently required to assist in our present needs.

Mr. WASON. You are asking for 1932, $621,050 as compared with $596,498 for 1931.

Doctor WETMORE. This appropriation is the one concerned mainly with the scientific work of the National Museum, care of the collections and the public exhibits, and the correspondence dealing with them.

In the present act there is included two other items formerly carried in separate acts, one for the purchase of books for the National Museum Library and the other for the payment of postage on letters sent to foreign countries. Heretofore, these two small items for books and postage have been separate acts. This year, at the suggestion of the Bureau of the Budget, to simplify the statement, they were included under this present act, preservation of collections.

This has made necessary certain additions in wording in this act covering the purchase of postage stamps and foreign postal cards, for one, and not exceeding $3,000 for purchase of books, pamphlets, and periodicals, for the other.

There is no change in authority in the combination of these acts. There is no change in the amount made available for the purchase of books or for foreign postage. They are simply combined here

as a matter of administrative simplicity to facilitate our bookkeeping and other work.

Mr. WASON. Your explanation covers the reason for the increase in the amount asked for 1932 as compared with the appropriation for 1931.

Doctor WETMORE. Yes, sir. The increases are concerned principally with additional personnel, which is highly important to us.

Mr. WASON. How many people are involved?

Doctor WETMORE. There are included, first, an additional stenographer for service in the Division of Birds, which is a position CAF 3 at $1,620 per annum. This division has no clerk of this character at the present time and it is highly necessary that we have this additional service here.

I am under the necessity of providing temporary service each year to assist the men carrying on scientific work in that division. The employment of temporary service is highly unsatisfactory, as it necessitates the training of people for a limited period of employment. There is lost motion and lost time.

Mr. WASON. Does that account for the increase over the current year?

Doctor WETMORE. There are other additional positions here, explanation for the necessity for all of them being included in the statement given by the secretary. I may merely add to that that the additional help is seriously needed in carrying on our work. At the present time we find it necessary to employ temporary labor in all these positions as our funds permit, which is not satisfactory as it is difficult to obtain competent help on a temporary basis and much time is lost in training.

The additional sums for upkeep, for freight for needed supplies, and so on, also are urgently required.

Mr. WASON. Insert a statement in the record covering that.

Doctor WETMORE. Very well.

Mr. SUMMERS. Have proper estimates been submitted to allow the guards four Sundays a month?

Doctor WETMORE. In the act for preservation of collections, there is included an increase in personnel of eight additional guards. Two years ago, we presented before the Bureau of the Budget a program calling for 24 additional guards to enable these men to be given time off for Sunday and holiday service and to provide additional guard service where it was needed.

This year we were given two additional men on that program and for 1932, the Budget has included eight further guards.

NATIONAL GALLERY OF ART

Mr. WASON. The next item is, National Gallery of Art.

For the administration of the National Gallery of Art by the Smithsonian Institution, including compensation of necessary employees, purchase of books of reference and periodicals, traveling expenses, uniforms for guards, and necessary incidental expenses, $45,460.

Doctor ABBOT. The following statement is submitted:

Appropriation, 1931		$44,873
Additional appropriation required for Brookhart Act		345
Total available for 1931		45,218
Budget for 1932	$45,400	
Les amount for under average salary adjustments	180	
Net amount for 1932		45,220
Actual amount of increase over 1931		2

The above appropriation is to provide for the regular operations of the National Gallery of Art, which is administered under the direction of the Smithsonian Institution. No change is anticipated in these operations during the coming fiscal year, and the only increase asked in the Budget estimate as submitted, over the $345 to meet the provisions of the Brookhart Act, and $180 to provide for the increase of under average salaries, is $2 which was apparently added by the Bureau of the Budget to make a round figure.

No changes are anticipated in these operations. The only increase asked is $345 under the Brookhart Act and $180 to provide for increase of under average salaries, and $2 which apparently has been added by the Bureau of the Budget to make a round figure.

ADMINISTRATION, ETC., GELLATLY ART COLLECTION

Mr. WASON. The next item is as follows:

For administration, maintenance, and exhibition in New York City of the Gellatly Art Collection, including rental, services, travel, and all other necessary incidental expenses, $20,000.

Doctor ABBOT. The following statement is submitted:

Appropriation 1931	$20,000
Budget estimate for 1932	20,000

The above appropriation is to continue the administration, maintenance, and exhibition of the Gellatly art collection, valued at many millions of dollars, which was presented to the gallery by Mr. John Gellatly, of New York, the terms of the gift requiring that the Government maintain this collection in New York until 1933, the date of the expiration of Mr. Gellatly's lease on the quarters occupied by the collection.

Doctor ABBOT. Mr. Gellatly, of New York City, gave to the Smithsonian Institution for the National Gallery of Art his great collection of American paintings and art objects of various kinds, which is valued at several million dollars, his condition being that the rental of the exhibition room in the Heckscher Building in New York should be taken on and also the expenses of the curator. That is done according to the act of Congress, and the sum is $20,000 a year which will be continued the same as before; there is no change.

PRINTING AND BINDING

Mr. WASON. The next item is for printing and binding, as follows:

For all printing and binding for the Smithsonian Institution, including all of its bureaus, offices, institutions and services located in Washington, District of Columbia, and elsewhere, $100,000, of which not to exceed $9,000 shall be available for printing the report of the American Historical Association: *Provided*, That the expenditure of this sum shall not be restricted to its pro rata amount in any period of the fiscal year.

Your current appropriation for this purpose is $99,000 and for 1932 you are estimating $100,000, or an increase of $1,000.

Doctor ABBOT. Mr. Dorsey, the chief clerk, will explain that item.

I submit the following statement in connection with this item for the record:

Appropriation 1931	$99,000
Net amount for 1932	100,000
Actual amount of increase over 1932	1,000

The above appropriation provides for the printing of all the Government branches under the institution, and for the printing of the annual report of the American Historical Association. The increase of $1,000 allowed by the Budget for the year 1932 over 1931 is to provide for the additional cost of printing the report of the American Historical Association.

PRINTING FOR AMERICAN HISTORICAL ASSOCIATION

Mr. DORSEY. The only increase the Bureau of the Budget has allowed is $1,000 over the current appropriation. That has been assigned to the publication of the report of the American Historical Association. That is contained in our appropriation, and the amount has been increased by $1,000 by the Bureau of the Budget.

Mr. SUMMERS. The text of the bill shows an increase for that purpose from $7,000 to $9,000, while the breakdown shows an increase from $7,000 to $8,000. What is the explanation of that?

Doctor WETMORE. The upper figure, in the text, is apparently a typographical error. It should be $8,000, since the increase is only $1,000.

Mr. DORSEY. Our current appropriation is $99,000, and the Bureau of the Budget allowed $100,000, an increase of $1,000.

Mr. WIGGLESWORTH. What increase did you ask from the Bureau of the Budget?

Mr. DORSEY. The American Historical Association asked us to include in our estimates $5,000 additional for their publication, but the Bureau of the Budget only allowed an increased of $1,000 in the total amount for printing and binding for the Smithsonian Institution.

Mr. WIGGLESWORTH. Is that increase sufficient for the purpose?

Mr. DORSEY. The amount allowed will be sufficient to carry on the work of printing and binding for the Smithsonian Institution proper, but it will not be sufficient to carry on the printing of the American Historical Association. They asked for $5,000, but the increase for them is only $1,000.

Mr. SUMMERS. Suppose you make a short statement with reference to the work of the American Historical Association and as to the importance, or otherwise, of the publication of their documents.

Mr. DORSEY. In general, Doctor Summers, the reports of the American Historical Association contain very important historical matter, including, for example the Austin papers, the Calhoun papers, and the correspondence of other important American historical personages. Their publications are much sought after, and they are very important in connection with the study of American history. I would say that the appropriation would be amply justified by the character of the work they put out. They do not anti-

cipate increasing by any great degree the amount of printing, but the cost of printing has increased so that they can not get out with the current appropriation the amount of material that they formerly published.

Mr. SUMMERS. Who prepared their works?

Mr. DORSEY. The American Historical Association's editor, Doctor Jamison.

Doctor ABBOTT. He would like to be heard, I am sure, in regard to this matter.

Mr. SUMMERS. Where is he?

Doctor ABBOT. In the Library of Congress.

Mr. SUMMERS. Does the Smithsonian Institution regard this as important historical work, or do they regard it as important that their reports should be published?

Doctor ABBOTT. Undoubtedly; I will say that in a conversation with me, Doctor Jamison told me that the increase which he desired from $7,000 to $12,000 was not on account of an increase in the amount of material to be printed, but that it was on account of the great increase in the cost of printing, which has come about since the war. There has been no increase in their material. Seven thousand dollars has been allowed for a good many years, but the cost of doing the work has increased very greatly; and he simply wishes to bring the appropriation up to parallel with what it was in former times, considering the more costly conditions.

Mr. DORSEY. One other point that should be brought out is this: The wording of the act provides that of this total appropriation for printing and binding for the Smithsonian Institution so much shall be allotted to the American Historical Association. Now, if that amount were increased to $12,000, the amount the American Historical Association asks for, without increasing the total appropriation, we could not get along with our printing. It would reduce the funds available for printing and binding for the Smithsonian Institution, so that if there is any increase in the allotment to the American Historical Association a corresponding increase should be allowed in the total appropriation.

Mr. WOODRUM. Ought not the "$9,000" in the bill, be "$8,000"?

Mr. DORSEY. Yes, sir; that is a typographical error. There is an increase of only $1,000 in the appropriation.

Mr. SUMMERS. We are to hear Doctor Jamison on the matter later.

Mr. WASON. Does this amount to a reduction of $1,000 in your appropriation?

Doctor WETMORE. The increase allowed by the Budget Bureau is $1,000 in the total amount, and we have allotted that entire sum to the American Historical Association.

Mr. WASON. That does not correspond to the way it appears in this bill.

Doctor WETMORE. We believe that is an error.

Mr. WOODRUM. Here is what has happened: The Budget Bureau has allowed you a total increase of $1,000 for printing and binding, but they have allowed in the allotment to the American Historical Association an increase of $2,000, which has the effect of giving them $1,000 from the Treasury fund and $1,000 from your fund.

Mr. SUMMERS. The breakdown at the bottom of the page shows an allotment of $8,000 to the American Historical Association.

Mr. DORSEY. That is the figure we submitted. The Budget Bureau gave an increase of $1,000. That $8,000 is the figure we submitted.

Mr. WASON. That should be $8,000 at the bottom of the page.

Doctor WETMORE. Yes, sir. As I have said, we can not afford to spare an additional $1,000 from the existing appropriation for other publications. In the National Museum, for example, at the present time, we have remaining unalloted only $10,000 from the total amount available to run for the rest of the year, and we have practically that much manuscript on hand now.

Mr. WASON. If that figure, instead of being printed "$9,000," should be printed "$8,000," would it be wrong?

Doctor WETMORE. No, sir; it would be right. We believe it is wrong as it is. If it were printed "$8,000," it would be correct.

Mr. SUMMERS. So far as your request is concerned and so far as the Budget is concerned, it is right.

Doctor ABBOT. We have a lump sum for the Smithsonian Institution, from which we are required to publish the reports of the American Historical Association. Hitherto $7,000 has gone for that purpose. The Budget allowed $1,000 more in the lump sum, and our understanding is that this $1,000 is to go to the American Historical Association, giving them $8,000; but in the paragraph at the top of the page the amount has been changed from $7,000 to $9,000. If that were to be so, it would, in effect, take $1,000 from our previous appropriation for printing and binding for the Smithsonian Institution, and we can not recommend that that be done, because we have really not enough for printing, as Doctor Wetmore says, as it is, for the Smithsonian Institution. Therefore, we would be sorry to have $1,000 taken off our appropriation and used for printing for the American Historical Association.

Mr. WASON. Let me see if I have my record right on this: I have put it down, not to exceed $8,000 shall be available for printing the report of the American Historical Association.

Doctor ABBOT. I would say that is perfectly right, provided you feel $8,000 is sufficient for their publication fund, but, if more money were required for the American Historical Association, there should be an additional amount allowed in the total appropriation, or there should be more than $100,000 provided in the lump sum.

Mr. WASON. The only correction we have gone into is that of changing the $9,000 to $8,000.

Doctor ABBOT. That would leave our appropriation as it is.

Mr. WASON. That completes the items for the Smithsonian Institution, I think.

Doctor ABBOT. I think so; yes, sir. We thank you very much for your attention.

MONDAY, JANUARY 5, 1931.

TARIFF COMMISSION

STATEMENTS OF SIDNEY MORGAN, SECRETARY, AND JOHN F. BETHUNE, UNITED STATES TARIFF COMMISSION

GENERAL STATEMENT

Mr. WASON. Mr. Bethune, state your full name and the activity you represent.

Mr. BETHUNE. John F. Bethune, representing the United States Tariff Commission.

Mr. WASON. How many years have you been connected with the Tariff Commission?

Mr. BETHUNE. Between 11 and 12 years.

Mr. WASON. You are asking for how much total this year?

Mr. BETHUNE. For $1,240,000, divided into two appropriations, one being $1,200,000 for salaries and expenses of the commission, and the other of $40,000 for all printing and binding for the United States Tariff Commission.

Mr. WASON. Do you wish to make a general statement?

Mr. BETHUNE. I will give a general résumé of the situation that is before you now for consideration.

The commission is pleased to furnish you herewith the statement requested in your letter of November 28, last, setting forth the financial requirements of the Tariff Commission as itemized in the Budget estimates for the fiscal year ending June 30, 1932.

ESTIMATES FOR 1932

The following tabular statement is set up to summarize and compare the financial requirements of fiscal 1931 and fiscal 1932.

Appropriations, United States Tariff Commission, 1931:		
Salaries and expenses	$760,000.00	
Reappropriated balance from 1929	40,000.00	
Reappropriated balance from 1930	101,030.20	
		$901,030.20
Printing and binding, 1931	25,000.00	
Reappropriated balance from 1930	12,916.89	
		37,916.89
Total		938,947.09
Amount transferred to Public Buildings Commission for rent		2,958.83
Net grand total for 1931		935,988.26
Total Budget estimate, 1932:		
Salaries and expenses	1,200,000.00	
Printing and binding	40,000.00	
		1,240,000.00
Net for 1932		1,240,000.00
Net for 1931		935,988.26
Difference		304,011.74